Title: Purified and Isolated MAT II β Subunit Nucleic Acids and Polypeptides...
Inventor: Kotb et al.
Attorney Docket No.: 1306/9/2/2

MAT II ß Protein Subunit Sequence

cDNA

```
                -60 CGTCGATCCTGGGTTGGAGGAGGTGGCGGCCGCTGAGGCTGCGGCGTGAAGACGGCGGGC     -1

(1)    M  V  G  R  E  K  E  L  S  I  H  F  V  P  G  S  C  R  L  V  E  E  E  V  N  I  P  N  R  R  V  L  V    (33)
+1    ATGGTGGGGCGGGAGAAAGAACTGTCTATACACTTTGTTCCCGGGAGCTGTCGGCTGGTGGAGGAGGAAGTTAACATCCCTAATAGGAGGGTTCTGGTT    99

(34)   T  G  A  T  G  L  L  G  R  A  V  H  K  E  F  Q  Q  N  N  W  H  A  V  G  C  G  F  R  R  A  R  P  K    (66)
100   ACTGGTGCCACTGGGCTTCTTGGCAGAGCTGTACACAAAGAATTTCAGCAGAATAATTGGCATGCAGTTGGCTGTGGTTTCAGAAGAGCAAGACCAAAA   198

(67)   F  E  Q  V  N  L  L  D  S  N  A  V  H  H  I  I  H  D  F  Q  P  H  V  I  V  H  C  A  A  E  R  R  P    (99)
199   TTTGAACAGGTTAATCTGTTGGATTCTAATGCAGTTCATCACATCATTCATGATTTTCAGCCCCATGTTATAGTACATTGTGCAGCAGAGAGAAGACCA   297

(100)  D  V  V  E  N  Q  P  D  A  A  S  Q  L  N  V  D  A  S  G  N  L  A  K  E  A  A  A  V  G  A  F  L  I    (132)
298   GATGTTGTAGAAAATCAGCCAGATGCTGCCTCTCAACTTAATGTGGATGCTTCTGGGAATTTAGCAAAGGAAGCAGCTGCTGTTGGAGCATTTCTCATC   396

(133)  Y  I  S  S  D  Y  V  F  D  G  T  N  P  P  Y  R  E  E  D  I  P  A  P  L  N  L  Y  G  K  T  K  L  D    (165)
397   TACATTAGCTCAGATTATGTATTTGATGGAACAAATCCACCTTACAGAGAGGAAGACATACCAGCTCCCCTAAATTTGTATGGCAAAACAAAATTAGAT   495

(166)  G  E  K  A  V  L  E  N  N  L  G  A  A  V  L  R  I  P  I  L  Y  G  E  V  E  K  L  E  E  S  A  V  T    (198)
496   GGAGAAAAGGCTGTCCTGGAGAACAATCTAGGAGCTGCTGTTTTGAGGATTCCTATTCTGTATGGGGAAGTTGAAAAGCTCGAAGAAAGTGCTGTGACT   594

(199)  V  M  F  D  K  V  Q  F  S  N  K  S  A  N  M  D  H  W  Q  Q  R  F  P  T  H  V  K  D  V  A  T  V  C    (231)
595   GTTATGTTTGATAAAGTGCAGTTCAGCAACAAGTCAGCAAACATGGATCACTGGCAGCAGAGGTTCCCCACACATGTCAAAGATGTGGCCACTGTGTGC   693

(232)  R  Q  L  A  E  K  R  M  L  D  P  S  I  K  G  T  F  H  W  S  G  N  E  Q  M  T  K  Y  E  M  A  C  A    (264)
694   CGGCAGCTAGCAGAGAAGAGAATGCTGGATCCATCAATTAAGGGAACCTTTCACTGGTCTGGCAATGAACAGATGACTAAGTATGAAATGGCATGTGCA   792

(265)  I  A  D  A  F  N  L  P  S  S  H  L  R  P  I  T  D  S  P  V  L  G  A  Q  R  P  R  N  A  Q  L  D  C    (297)
793   ATTGCAGATGCCTTCAACCTCCCCAGCAGTCACTTAAGACCTATTACTGACAGCCCTGTCCTAGGAGCACAACGTCCGAGAAATGCTCAGCTTGACTGC   891

(298)  S  K  L  E  T  L  G  I  G  Q  R  T  P  F  R  I  G  I  K  E  S  L  W  P  F  L  I  D  K  R  W  R  Q    (330)
892   TCCAAATTGGAGACCTTGGGCATTGGCCAACGAACACCATTTCGAATTGGAATCAAAGAATCACTTTGGCCTTTCCTCATTGACAAGAGATGGAGACAA   990

(331)  T  V  F  H Ter                                                                                        (334)
991   ACGGTCTTTCATTAGTCTATTTGTGTTGGGTTCTTTTTTTTTTAAATGAAAAGTATAGTATGTGGCACTTTTTAAAGAACAAAGGAAATAGTTTTGTAT  1089
1090  GAGTACTTTAATTGTGACTCTTAGGATCTTTCAGGTAAATGATGCTCTTGCACTAGTGAAATTGTCTAAAGAAACTAAAGGGCAGTCATGCCCTGTTTG
1189  CAGTAATTTTTCTTTTTATCATTTTGTTTGTCCTGGCTAAACTTGGAGTTTGAGTATAGTAAATTATGATCCTTAAATATTTGAGAGTCAGGATGAAGC
1288  AGACCTGCTGTAGACTTTTCAGATGAAATTGTTCATTCTCGTAACCTCCATATTTTCAGGATTTTTGAAGCTGTTGACCTTTTCATGTTGATTATTTTA
1387  AATTGTGTGAAATAGTATAAAAATCATTGGTGTACATTATTTGCTTTGCCTGAGCTCAGATCAAAATGTTTGAAGAAAGGAACTTTATTTTTGCAAGTT
1486  ACGTACAGTTTTTATGCTTGAGATATTTCAACATGTTATGTATATTGGAACTTCTACAGCTTGATGCCTCCTGCTTTTATAGCAGTTTATGGGGAGCAC
1585  TTGAAAGAGCGTGTGTACATGTATTTTTTTTCTAGGCAAACATTGAATGCAAACGTGTATTTTTTTAATATAAATATATAACTGTCCTTTTCATCCCAT
1684  GTTGCCGCTAAGTGATATTTCATATGTGTGGTTATACTCATAATAATGGGCCTTGTAAGCCTTTTCACCATTCATGAATAATAATAAATATGTACTGCT
1783  GGCATGT(A)18+
```

polyadenylation signal

FIG. 1

Title: Purified and Isolated MAT II β
Subunit Nucleic Acids and
Polypeptides...
Inventor: Kotb et al.
Attorney Docket No.: 1306/9/2/2

MAT II ß Protein Subunit Sequence

cDNA

```
                                    -60 CGTCGATCCTGGGTTGGAGGAGGTGGCGGCCGCTGAGGCTGCGGCGTGAAGACGGCGGGC      -1

 (1)   M  V  G  R  E  K  E  I  S  I  H  F  V  P  G  S  C  R  L  V  E  E  E  V  N  I  P  N  R  R  V  L  V   (33)
 +1   ATGGTGGGGCGGGAGAAAGAAATCTCTATACACTTTGTTCCCGGGAGCTGTCGGCTGGTGGAGGAGGAAGTTAACATCCCTAATAGGAGGGTTCTGGTT   99

(34)   T  G  A  T  G  L  L  G  R  A  V  H  K  E  F  Q  Q  N  N  W  H  A  V  G  C  G  F  R  R  A  R  P  K   (66)
100   ACTGGTGCCACTGGGCTTCTTGGCAGAGCTGTACACAAAGAATTTCAGCAGAATAATTGGCATGCAGTTGGCTGTGGTTTCAGAAGAGCAAGACCAAAA  198

(67)   F  E  Q  V  N  L  L  D  S  N  A  V  H  H  I  I  H  D  F  Q  P  H  V  I  V  H  C  A  A  E  R  R  P   (99)
199   TTTGAACAGGTTAATCTGTTGGATTCTAATGCAGTTCATCACATCATTCATGATTTTCAGCCCCATGTTATAGTACATTGTGCAGCAGAGAGAAGACCA  297

(100)  D  V  V  E  N  Q  P  D  A  A  S  Q  L  N  V  D  A  S  G  N  L  A  K  E  A  A  A  V  G  A  F  L  I   (132)
298   GATGTTGTAGAAAATCAGCCAGATGCTGCCTCTCAACTTAATGTGGATGCTTCTGGGAATTTAGCAAAGGAAGCAGCTGCTGTTGGAGCATTTCTCATC  396

(133)  Y  I  S  S  D  Y  V  F  D  G  T  N  P  P  Y  R  E  E  D  I  P  A  P  L  N  L  Y  G  K  T  K  L  D   (165)
397   TACATTAGCTCAGATTATGTATTTGATGGAACAAATCCACCTTACAGAGAGGAAGACATACCAGCTCCCCTAAATTTGTATGGCAAAACAAAATTAGAT  495

(166)  G  E  K  A  V  L  E  N  N  L  G  A  A  V  L  R  I  P  I  L  Y  G  E  V  E  K  L  E  E  S  A  V  T   (198)
496   GGAGAAAAGGCTGTCCTGGAGAACAATCTAGGAGCTGCTGTTTTGAGGATTCCTATTCTGTATGGGGAAGTTGAAAAGCTCGAAGAAAGTGCTGTGACT  594

(199)  V  M  F  D  K  V  Q  F  S  N  K  S  A  N  M  D  H  W  Q  Q  R  F  P  T  H  V  K  D  V  A  T  V  C   (231)
595   GTTATGTTTGATAAAGTGCAGTTCAGCAACAAGTCAGCAAACATGGATCACTGGCAGCAGAGGTTCCCCACACATGTCAAAGATGTGGCCACTGTGTGC  693

(232)  R  Q  L  A  E  K  R  M  L  D  P  S  I  K  G  T  F  H  W  S  G  N  E  Q  M  T  K  Y  E  M  A  C  A   (264)
694   CGGCAGCTAGCAGAGAAGAGAATGCTGGATCCATCAATTAAGGGAACCTTTCACTGGTCTGGCAATGAACAGATGACTAAGTATGAAATGGCATGTGCA  792

(265)  I  A  D  A  F  N  L  P  S  S  H  L  R  P  I  T  D  S  P  V  L  G  A  Q  R  P  R  N  A  Q  L  D  C   (297)
793   ATTGCAGATGCCTTCAACCTCCCCAGCAGTCACTTAAGACCTATTACTGACAGCCCTGTCCTAGGAGCACAACGTCCGAGAAATGCTCAGCTTGACTGC  891

(298)  S  K  L  E  T  L  G  I  G  Q  R  T  P  F  R  I  G  I  K  E  S  L  W  P  F  L  I  D  K  R  W  R  Q   (330)
892   TCCAAATTGGAGACCTTGGGCATTGGCCAACGAACACCATTTCGAATTGGAATCAAAGAATCACTTTGGCCTTTCCTCATTGACAAGAGATGGAGACAA  990

(331)  T  V  F  H Ter                                                                                          (334)
991   ACGGTCTTTCATTAGTCTATTTGTGTTGGGTTCTTTTTTTTTAAATGAAAAGTATAGTATGTGGCACTTTTTAAAGAACAAAGGAAATAGTTTTGTAT  1089
1090  GAGTACTTTAATTGTGACTCTTAGGATCTTTCAGGTAAATGATGCTCTTGCACTAGTGAAATTGTCTAAAGAAACTAAAGGGCAGTCATGCCCTGTTTG
1189  CAGTAATTTTTCTTTTTATCATTTTGTTTGTCCTGGCTAAACTTGGAGTTTGAGTATAGTAAATTATGATCCTTAAATATTTGAGAGTCAGGATGAAGC
1288  AGACCTGCTGTAGACTTTTCAGATGAAATTGTTCATTCTCGTAACCTCCATATTTTCAGGATTTTTGAAGCTGTTGACCTTTTCATGTTGATTATTTTA
1387  AATTGTGTGAAATAGTATAAAAATCATTGGTGTACATTATTTGCTTTGCCTGAGCTCAGATCAAAATGTTTGAAGAAAGGAACTTTATTTTTGCAAGTT
1486  ACGTACAGTTTTTATGCTTGAGATATTTCAACATGTTATGTATATTGGAACTTCTACAGCTTGATGCCTCCTGCTTTTATAGCAGTTTATGGGGAGCAC
1585  TTGAAAGAGCGTGTGTACATGTATTTTTTTTCTAGGCAAACATTGAATGCAAACGTGTATTTTTTTAATATAAATATATAACTGTCCTTTTCATCCCAT
1684  GTTGCCGCTAAGTGATATTTCATATGTGTGGTTATACTCATAATAATGGGCCTTGTAAGCCTTTTCACCATTCATGAATAATAATAAATATGTACTGCT
1783  GGCATGT(A) 18+
```

FIG. 2

polyadenylation signal

Title: Purified and Isolated MAT II β Subunit Nucleic Acids and Polypeptides...
Inventor: Kotb et al.
Attorney Docket No.: 1306/9/2/2

MAT II ß Protein Subunit Sequence

cDNA

```
                  -60 CGTCGATCCTGGGTTGGAGGAGGTGGCGGCCGCTGAGGCTGCGGCGTGAAGACGGCGGGC     -1

 (1)   M  V  G  R  E  K  E  L  S  I  H  F  V  P  G  S  C  R  L  V  E  E  E  V  N  I  P  N  R  R  V  I  V   (33)
 +1    ATGGTGGGGCGGGAGAAAGAACTGTCTATACACTTTGTTCCCGGGAGCTGTCGGCTGGTGGAGGAGGAAGTTAACATCCCTAATAGGAGGGTTATCGTT   99

 (34)  T  G  A  T  G  L  L  G  R  A  V  H  K  E  F  Q  Q  N  N  W  H  A  V  G  C  G  F  R  R  A  R  P  K   (66)
 100   ACTGGTGCCACTGGGCTTCTTGGCAGAGCTGTACACAAAGAATTTCAGCAGAATAATTGGCATGCAGTTGGCTGTGGTTTCAGAAGAGCAAGACCAAAA  198

 (67)  F  E  Q  V  N  L  L  D  S  N  A  V  H  H  I  I  H  D  F  Q  P  H  V  I  V  H  C  A  A  E  R  R  P   (99)
 199   TTTGAACAGGTTAATCTGTTGGATTCTAATGCAGTTCATCACATCATTCATGATTTTCAGCCCCATGTTATAGTACATTGTGCAGCAGAGAGAAGACCA  297

 (100) D  V  V  E  N  Q  P  D  A  A  S  Q  L  N  V  D  A  S  G  N  L  A  K  E  A  A  A  V  G  A  F  L  I   (132)
 298   GATGTTGTAGAAAATCAGCCAGATGCTGCCTCTCAACTTAATGTGGATGCTTCTGGGAATTTAGCAAAGGAAGCAGCTGCTGTTGGAGCATTTCTCATC  396

 (133) Y  I  S  S  D  Y  V  F  D  G  T  N  P  P  Y  R  E  E  D  I  P  A  P  L  N  L  Y  G  K  T  K  L  D   (165)
 397   TACATTAGCTCAGATTATGTATTTGATGGAACAAATCCACCTTACAGAGAGGAAGACATACCAGCTCCCCTAAATTTGTATGGCAAAACAAAATTAGAT  495

 (166) G  E  K  A  V  L  E  N  N  L  G  A  A  V  L  R  I  P  I  L  Y  G  E  V  E  K  L  E  E  S  A  V  T   (198)
 496   GGAGAAAAGGCTGTCCTGGAGAACAATCTAGGAGCTGCTGTTTTGAGGATTCCTATTCTGTATGGGGAAGTTGAAAAGCTCGAAGAAAGTGCTGTGACT  594

 (199) V  M  F  D  K  V  Q  F  S  N  K  S  A  N  M  D  H  W  Q  Q  R  F  P  T  H  V  K  D  V  A  T  V  C   (231)
 595   GTTATGTTTGATAAAGTGCAGTTCAGCAACAAGTCAGCAAACATGGATCACTGGCAGCAGAGGTTCCCCACACATGTCAAAGATGTGGCCACTGTGTGC  693

 (232) R  Q  L  A  E  K  R  M  L  D  P  S  I  K  G  T  F  H  W  S  G  N  E  Q  M  T  K  Y  E  M  A  C  A   (264)
 694   CGGCAGCTAGCAGAGAAGAGAATGCTGGATCCATCAATTAAGGGAACCTTTCACTGGTCTGGCAATGAACAGATGACTAAGTATGAAATGGCATGTGCA  792

 (265) I  A  D  A  F  N  L  P  S  S  H  L  R  P  I  T  D  S  P  V  L  G  A  Q  R  P  R  N  A  Q  L  D  C   (297)
 793   ATTGCAGATGCCTTCAACCTCCCCAGCAGTCACTTAAGACCTATTACTGACAGCCCTGTCCTAGGAGCACAACGTCCGAGAAATGCTCAGCTTGACTGC  891

 (298) S  K  L  E  T  L  G  I  G  Q  R  T  P  F  R  I  G  I  K  E  S  L  W  P  F  L  I  D  K  R  W  R  Q   (330)
 892   TCCAAATTGGAGACCTTGGGCATTGGCCAACGAACACCATTTCGAATTGGAATCAAAGAATCACTTTGGCCTTTCCTCATTGACAAGAGATGGAGACAA  990

 (331) T  V  F  H Ter                                                                                          (334)
 991   ACGGTCTTTCATTAGTCTATTTGTGTTGGGTTCTTTTTTTTTTAAATGAAAAGTATAGTATGTGGCACTTTTTAAAGAACAAAGGAAATAGTTTTGTAT  1089
 1090  GAGTACTTTAATTGTGACTCTTAGGATCTTTCAGGTAAATGATGCTCTTGCACTAGTGAAATTGTCTAAAGAAACTAAAGGGCAGTCATGCCCTGTTTG
 1189  CAGTAATTTTTCTTTTTATCATTTTGTTTGTCCTGGCTAAACTTGGAGTTTGAGTATAGTAAATTATGATCCTTAAATATTTGAGAGTCAGGATGAAGC
 1288  AGACCTGCTGTAGACTTTTCAGATGAAATTGTTCATTCTCGTAACCTCCATATTTTCAGGATTTTTGAAGCTGTTGACCTTTTCATGTTGATTATTTTA
 1387  AATTGTGTGAAATAGTATAAAAATCATTGGTGTACATTATTTGCTTTGCCTGAGCTCAGATCAAAATGTTTGAAGAAAGGAACTTTATTTTTGCAAGTT
 1486  ACGTACAGTTTTTATGCTTGAGATATTTCAACATGTTATGTATATTGGAACTTCTACAGCTTGATGCCTCCTGCTTTTATAGCAGTTTATGGGGAGCAC
 1585  TTGAAAGAGCGTGTGTACATGTATTTTTTTTCTAGGCAAACATTGAATGCAAACGTGTATTTTTTTAATATAAATATATAACTGTCCTTTTCATCCCAT
 1684  GTTGCCGCTAAGTGATATTTCATATGTGTGGTTATACTCATAATAATGGGCCTTGTAAGCCTTTTCACCATTCATGAATAATAATAAATATGTACTGCT
 1783  GGCATGT(A) 18+
```

FIG. 3

polyadenylation signal

Title: Purified and Isolated MAT II β Subunit Nucleic Acids and Polypeptides...
Inventor: Kotb et al.
Attorney Docket No.: 1306/9/2/2

MAT II ß Protein Subunit Sequence

cDNA

```
         -60 CGTCGATCCTGGGTTGGAGGAGGTGGCGGCCGCTGAGGCTGCGGCGTGAAGACGGCGGGC   -1

 (1)  M  V  G  R  E  K  E  L  S  I  H  F  V  P  G  S  C  R  L  V  E  E  E  V  N  I  P  N  R  R  V  L  V   (33)
 +1   ATGGTGGGGCGGGAGAAAGAACTGTCTATACACTTTGTTCCCGGGAGCTGTCGGCTGGTGGAGGAGGAAGTTAACATCCCTAATAGGAGGGTTCTGGTT   99

 (34) T  G  A  T  G  L  L  G  R  A  V  H  K  E  F  Q  Q  N  N  W  H  A  V  G  C  G  F  R  R  A  R  P  K   (66)
 100  ACTGGTGCCACTGGGCTTCTTGGCAGAGCTGTACACAAAGAATTTCAGCAGAATAATTGGCATGCAGTTGGCTGTGGTTTCAGAAGAGCAAGACCAAAA   198

 (67) F  E  Q  V  N  L  L  D  S  N  A  V  H  H  I  I  H  D  F  Q  P  H  V  I  V  H  C  A  A  E  R  R  P   (99)
 199  TTTGAACAGGTTAATCTGTTGGATTCTAATGCAGTTCATCACATCATTCATGATTTTCAGCCCCATGTTATAGTACATTGTGCAGCAGAGAGAAGACCA   297

(100) D  V  V  E  N  Q  P  D  A  A  S  Q  L  N  V  D  A  S  G  N  L  A  K  E  A  A  A  V  G  A  F  L  I   (132)
 298  GATGTTGTAGAAAATCAGCCAGATGCTGCCTCTCAACTTAATGTGGATGCTTCTGGGAATTTAGCAAAGGAAGCAGCTGCTGTTGGAGCATTTCTCATC   396

(133) Y  I  S  S  D  Y  V  F  D  G  T  N  P  P  Y  R  E  E  D  I  P  A  P  L  N  L  Y  G  K  T  K  L  D   (165)
 397  TACATTAGCTCAGATTATGTATTTGATGGAACAAATCCACCTTACAGAGAGGAAGACATACCAGCTCCCCTAAATTTGTATGGCAAAACAAAATTAGAT   495

(166) G  E  K  A  V  L  E  N  N  L  G  A  A  V  L  R  I  P  I  I  Y  G  E  V  E  K  L  E  E  S  A  V  T   (198)
 496  GGAGAAAAGGCTGTCCTGGAGAACAATCTAGGAGCTGCTGTTTTGAGGATTCCTATTATCTATGGGGAAGTTGAAAAGCTCGAAGAAAGTGCTGTGACT   594

(199) V  M  F  D  K  V  Q  F  S  N  K  S  A  N  M  D  H  W  Q  Q  R  F  P  T  H  V  K  D  V  A  T  V  C   (231)
 595  GTTATGTTTGATAAAGTGCAGTTCAGCAACAAGTCAGCAAACATGGATCACTGGCAGCAGAGGTTCCCCACACATGTCAAAGATGTGGCCACTGTGTGC   693

(232) R  Q  L  A  E  K  R  M  L  D  P  S  I  K  G  T  F  H  W  S  G  N  E  Q  M  T  K  Y  E  M  A  C  A   (264)
 694  CGGCAGCTAGCAGAGAAGAGAATGCTGGATCCATCAATTAAGGGAACCTTTCACTGGTCTGGCAATGAACAGATGACTAAGTATGAAATGGCATGTGCA   792

(265) I  A  D  A  F  N  L  P  S  S  H  L  R  P  I  T  D  S  P  V  L  G  A  Q  R  P  R  N  A  Q  L  D  C   (297)
 793  ATTGCAGATGCCTTCAACCTCCCCAGCAGTCACTTAAGACCTATTACTGACAGCCCTGTCCTAGGAGCACAACGTCCGAGAAATGCTCAGCTTGACTGC   891

(298) S  K  L  E  T  L  G  I  G  Q  R  T  P  F  R  I  G  I  K  E  S  L  W  P  F  L  I  D  K  R  W  R  Q   (330)
 892  TCCAAATTGGAGACCTTGGGCATTGGCCAACGAACACCATTTCGAATTGGAATCAAAGAATCACTTTGGCCTTTCCTCATTGACAAGAGATGGAGACAA   990

(331) T  V  F  H Ter                                                                                          (334)
 991  ACGGTCTTTCATTAGTCTATTTGTGTTGGGTTCTTTTTTTTTAAATGAAAAGTATAGTATGTGGCACTTTTTAAAGAACAAAGGAAATAGTTTTGTAT   1089
1090  GAGTACTTTAATTGTGACTCTTAGGATCTTTCAGGTAAATGATGCTCTTGCACTAGTGAAATTGTCTAAAGAAACTAAAGGGCAGTCATGCCCTGTTTG
1189  CAGTAATTTTTCTTTTTATCATTTTGTTTGTCCTGGCTAAACTTGGAGTTTGAGTATAGTAAATTATGATCCTTAAATATTTGAGAGTCAGGATGAAGC
1288  AGACCTGCTGTAGACTTTTCAGATGAAATTGTTCATTCTCGTAACCTCCATATTTTCAGGATTTTTGAAGCTGTTGACCTTTTCATGTTGATTATTTTA
1387  AATTGTGTGAAATAGTATAAAAATCATTGGTGTACATTATTTGCTTTGCCTGAGCTCAGATCAAAATGTTTGAAGAAAGGAACTTTATTTTTGCAAGTT
1486  ACGTACAGTTTTTATGCTTGAGATATTTCAACATGTTATGTATATTGGAACTTCTACAGCTTGATGCCTCCTGCTTTTATAGCAGTTTATGGGGAGCAC
1585  TTGAAAGAGCGTGTGTACATGTATTTTTTTTCTAGGCAAACATTGAATGCAAACGTGTATTTTTTTAATATAAATATATAACTGTCCTTTTCATCCCAT
1684  GTTGCCGCTAAGTGATATTTCATATGTGTGGTTATACTCATAATAATGGGCCTTGTAAGCCTTTTCACCATTCATGAATAATAATAAATATGTACTGCT
1783  GGCATGT(A) 18+
```

FIG. 4

polyadenylation signal

MAT II ß Protein Subunit Sequence

cDNA

```
         -60 CGTCGATCCTGGGTTGGAGGAGGTGGCGGCCGCTGAGGCTGCGGCGTGAAGACGGCGGGC   -1

 (1)    M  V  G  R  E  K  E  L  S  I  H  F  V  P  G  S  C  R  L  V  E  E  E  V  N  I  P  N  R  R  V  L  V   (33)
 +1     ATGGTGGGGCGGGAGAAAGAACTGTCTATACACTTTGTTCCCGGGAGCTGTCGGCTGGTGGAGGAGGAAGTTAACATCCCTAATAGGAGGGTTCTGGTT   99

 (34)   T  G  A  T  G  L  L  G  R  A  V  H  K  E  F  Q  Q  N  N  W  H  A  V  G  C  G  F  R  R  A  R  P  K   (66)
 100    ACTGGTGCCACTGGGCTTCTTGGCAGAGCTGTACACAAAGAATTTCAGCAGAATAATTGGCATGCAGTTGGCTGTGGTTTCAGAAGAGCAAGACCAAAA   198

 (67)   F  E  Q  V  N  L  L  D  S  N  A  V  H  H  I  I  H  D  F  Q  P  H  V  I  V  H  C  A  A  E  R  R  P   (99)
 199    TTTGAACAGGTTAATCTGTTGGATTCTAATGCAGTTCATCACATCATTCATGATTTTCAGCCCCATGTTATAGTACATTGTGCAGCAGAGAGAAGACCA   297

 (100)  D  V  V  E  N  Q  P  D  A  A  S  Q  L  N  V  D  A  S  G  N  L  A  K  E  A  A  A  V  G  A  F  L  I   (132)
 298    GATGTTGTAGAAAATCAGCCAGATGCTGCCTCTCAACTTAATGTGGATGCTTCTGGGAATTTAGCAAAGGAAGCAGCTGCTGTTGGAGCATTTCTCATC   396

 (133)  Y  I  S  S  D  Y  V  F  D  G  T  N  P  P  Y  R  E  E  D  I  P  A  P  L  N  L  Y  G  K  T  K  L  D   (165)
 397    TACATTAGCTCAGATTATGTATTTGATGGAACAAATCCACCTTACAGAGAGGAAGACATACCAGCTCCCCTAAATTTGTATGGCAAAACAAAATTAGAT   495

 (166)  G  E  K  A  V  L  E  N  N  L  G  A  A  V  L  R  I  P  I  L  Y  G  E  V  E  K  L  E  E  S  A  V  T   (198)
 496    GGAGAAAAGGCTGTCCTGGAGAACAATCTAGGAGCTGCTGTTTTGAGGATTCCTATTCTGTATGGGGAAGTTGAAAAGCTCGAAGAAAGTGCTGTGACT   594

 (199)  V  M  F  D  K  V  Q  F  S  N  K  S  A  N  M  D  H  W  Q  Q  R  F  P  T  H  V  K  D  V  A  T  V  C   (231)
 595    GTTATGTTTGATAAAGTGCAGTTCAGCAACAAGTCAGCAAACATGGATCACTGGCAGCAGAGGTTCCCCACACATGTCAAAGATGTGGCCACTGTGTGC   693

 (232)  R  Q  L  A  E  K  R  M  L  D  P  S  I  K  G  T  F  H  W  S  G  N  E  Q  M  T  K  Y  E  M  A  C  A   (264)
 694    CGGCAGCTAGCAGAGAAGAGAATGCTGGATCCATCAATTAAGGGAACCTTTCACTGGTCTGGCAATGAACAGATGACTAAGTATGAAATGGCATGTGCA   792

 (265)  I  A  D  A  F  N  I  P  S  S  H  L  R  P  I  T  D  S  P  V  L  G  A  Q  R  P  R  N  A  Q  L  D  C   (297)
 793    ATTGCAGATGCCTTCAACATCCCCAGCAGTCACTTAAGACCTATTACTGACAGCCCTGTCCTAGGAGCACAACGTCCGAGAAATGCTCAGCTTGACTGC   891

 (298)  S  K  L  E  T  L  G  I  G  Q  R  T  P  F  R  I  G  I  K  E  S  L  W  P  F  L  I  D  K  R  W  R  Q   (330)
 892    TCCAAATTGGAGACCTTGGGCATTGGCCAACGAACACCATTTCGAATTGGAATCAAAGAATCACTTTGGCCTTTCCTCATTGACAAGAGATGGAGACAA   990

 (331)  T  V  F  H Ter                                                                                          (334)
 991    ACGGTCTTTCATTAGTCTATTTGTGTTGGGTTCTTTTTTTTTAAATGAAAAGTATAGTATGTGGCACTTTTTAAAGAACAAAGGAAATAGTTTTGTAT  1089
 1090   GAGTACTTTAATTGTGACTCTTAGGATCTTTCAGGTAAATGATGCTCTTGCACTAGTGAAATTGTCTAAAGAAACTAAAGGGCAGTCATGCCCTGTTTG
 1189   CAGTAATTTTTCTTTTTATCATTTTGTTTGTCCTGGCTAAACTTGGAGTTTGAGTATAGTAAATTATGATCCTTAAATATTTGAGAGTCAGGATGAAGC
 1288   AGACCTGCTGTAGACTTTTCAGATGAAATTGTTCATTCTCGTAACCTCCATATTTTCAGGATTTTTGAAGCTGTTGACCTTTTCATGTTGATTATTTTA
 1387   AATTGTGTGAAATAGTATAAAAATCATTGGTGTACATTATTTGCTTTGCCTGAGCTCAGATCAAAATGTTTGAAGAAAGGAACTTTATTTTTGCAAGTT
 1486   ACGTACAGTTTTTATGCTTGAGATATTTCAACATGTTATGTATATTGGAACTTCTACAGCTTGATGCCTCCTGCTTTTATAGCAGTTTATGGGGAGCAC
 1585   TTGAAAGAGCGTGTGTACATGTATTTTTTTTCTAGGCAAACATTGAATGCAAACGTGTATTTTTTTAATATAAATATATAACTGTCCTTTTCATCCCAT
 1684   GTTGCCGCTAAGTGATATTTCATATGTGGTTATACTCATAATAATGGGCCTTGTAAGCCTTTTCACCATTCATGAATAATAATAAATATGTACTGCT
 1783   GGCATGT(A) 18+
```

polyadenylation signal

FIG. 5

Title: Purified and Isolated MAT II β
Subunit Nucleic Acids and
Polypeptides...
Inventor: Kotb et al.
Attorney Docket No.: 1306/9/2/2

```
tttgcaaaag aaactccagg attcttgaca gaaagttgtt gggttttggt tttggttttg 60
ttaagtagtt agttctacca atagtttgca aatagaccca ggcttgactg gcaattaacc 120
atgaaacttc tcattgggta ttttcgagac tactacgggg aatcagctac cagctttact 180
gccatgtgga gaactgcacg agattccggg attggaatca aaatgctaat ttaaaggtc 240
aagtgaagct gctcctcacg ttttggcgtg cctgcgctct ctgcaggcag aagcgaacaa 300
agacccagca agagaaggca gaggctaaga cccatcccgt atctgctctc ctgaaataat 360
tctggagtca tgcctgaaat gccagaggac atggagcagg taagaactag caattcaaga 420
aatgaagcat tctagagtaa gagatgcttt aaaagcattc cagtgaacgc ctgctaaaac 480
cagaattgtt gtgtaaagaa aatagaaacg ggtgtcattc atttccttaa aacataacct 540
cgggacatgg aagaataagc caactttagt tactgacccg gagaaccagg ttatgaaggg 600
ctcagctaag tctcactagc tgacaataca gaattgcact ttcatttacc attttaaatg 660
caattatgta tataaagttt ctacataaat aaggatttta tctgtagtgt gttcccttcc 720
agatgttctt tgtctttgta tgaattgaat ctgctaacat aacttttagt ttcaggctgc 780
tctctttaaa tgtatagact tagccaccac acgaagttgt atattgtcta tgttaagaat 840
ggcgtttgat tcgcatagac cctaccatca ttaaagaaaa tgattaaaaa ccatatccaa 900
acatatgccc ctagaactgt acccaacttt tacggggaaa gtatcaagtc agattttcaa 960
aagcagccaa gttaaattct ttctgttcct caagactagg ctgctctgag aatcagaatg 1020
ctaattgcat atgcttgccc ttaaacctgc ttcacgttga agaatgaaga attaatttc 1080
ttttctccca tagaaaggta agattacatc acgtgttgcg actagaaact ttaaaccgaa 1140
ttcccagtta agagaaaaag tagtaagatg atcttggctg ctcccccggc cctcttcccg 1200
ccctcttctt tgttgtcccc tgattatgct tgtttagcgc tggggcagtc ctcaaggatt 1260
ccctaaataa agccaaactg atgaacagta atagcctgtg tttaaaaaaa aaaaaatcgg 1320
aacataagaa acctcaggct gtcttcgatt actgttctag agaaacttta tgtttacacg 1380
aataaggaaa tgagtttttg ttgggggttg aggaggaagg aaagtcatgg tgttctgacg 1440
tggaaaactt ctttaaaagg ctgcttagtc tttagtttga aaataaacca aaaaggttta 1500
ggagtcgggg aaaggcccta ggaaaatcca gacagtggtc acgtttgtgg acgacgttta 1560
gagcttgcta tcctgggcac acaagaaccc ttggactgtt cggtgcaaag ttggcaaatc 1620
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ggcagcggaa gccggaagcg gcgagcgggg tcgttctggg cctaggggag gcgggccgag 2580
ggcgtctgag ctgaggcccg cgtcgatcct gggttggagg aggtggcggc cgctgaggct 2640
gcggcgtgaa gacggcgggc                                            2660
```

FIG. 6

Title: Purified and Isolated MAT II β
Subunit Nucleic Acids and
Polypeptides...
Inventor: Kotb et al.
Attorney Docket No.: 1306/9/2/2

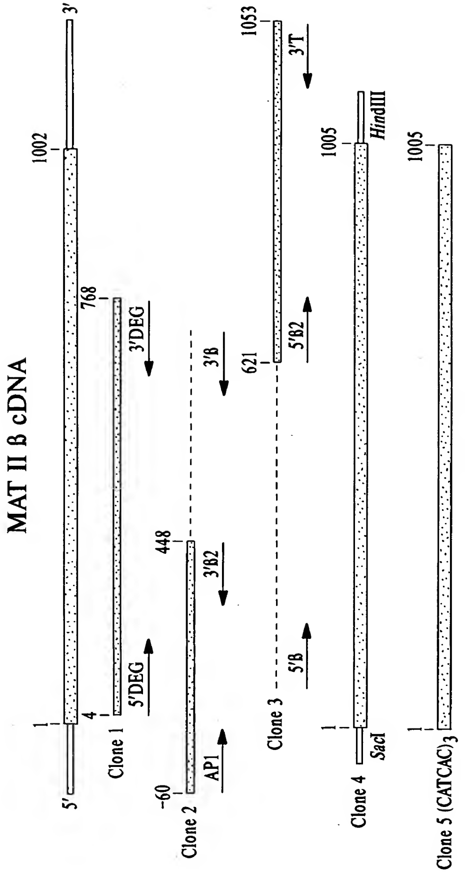


FIG. 7

```
cDNA                    -60 CGTCGATCCTGGGTTGGAGGAGGTGGCGGCCGCTGAGGCTGCGGCGTGAAGACGGCGGGC  -1

(1)   M  V  G  R  E  K  E  L  S  I  H  F  V  P  G  S  C  R  L  V  E  E  E  V  N  I  P  N  R  R  V  L  V  (33)
+1    ATGGTGGGGCGGGAGAAAGAACTGTCTATACACTTTGTTCCCGGGAGCTGTCGGCTGGTGGAGGAGGAAGTTAACATCCCTAATAGGAGGGTTCTGGTT  99

(34)  T  G  A  T  G  L  L  G  R  A  V  H  K  E  F  Q  Q  N  N  W  H  A  V  G  C  G  F  R  R  A  R  P  K  (66)
100   ACTGGTGCCACTGGGCTTCTTGGCAGAGCTGTACACAAAGAATTTCAGCAGAATAATTGGCATGCAGTTGGCTGTGGTTTCAGAAGAGCAAGACCAAAA  198

(67)  F  E  Q  V  N  L  L  D  S  N  A  V  H  H  I  I  H  D  F  Q  P  H  V  I  V  H  C  A  A  E  R  R  P  (99)
199   TTTGAACAGGTTAATCTGTTGGATTCTAATGCAGTTCATCACATCATTCATGATTTTCAGCCCCATGTTATAGTACATTGTGCAGCAGAGAGAAGACCA  297

(100) D  V  V  E  N  Q  P  D  A  A  S  Q  L  N  V  D  A  S  G  N  L  A  K  E  A  A  A  V  G  A  F  L  I  (132)
298   GATGTTGTAGAAAATCAGCCAGATGCTGCCTCTCAACTTAATGTGGATGCTTCTGGGAATTTAGCAAAGGAAGCAGCTGCTGTTGGAGCATTTCTCATC  396

(133) Y  I  S  S  D  Y  V  F  D  G  T  N  P  P  Y  R  E  E  D  I  P  A  P  L  N  L  Y  G  K  T  K  L  D  (165)
397   TACATTAGCTCAGATTATGTATTTGATGGAACAAATCCACCTTACAGAGAGGAAGACATACCAGCTCCCCTAAATTTGTATGGCAAAACAAAATTAGAT  495

(166) G  E  K  A  V  L  E  N  N  L  G  A  A  V  L  R  I  P  I  L  Y  G  E  V  E  K  L  E  E  S  A  V  T  (198)
496   GGAGAAAAGGCTGTCCTGGAGAACAATCTAGGAGCTGCTGTTTTGAGGATTCCTATTCTGTATGGGGAAGTTGAAAAGCTCGAAGAAAGTGCTGTGACT  594

(199) V  M  F  D  K  V  Q  F  S  N  K  S  A  N  M  D  H  W  Q  Q  R  F  P  T  H  V  K  D  V  A  T  V  C  (231)
595   GTTATGTTTGATAAAGTGCAGTTCAGCAACAAGTCAGCAAACATGGATCACTGGCAGCAGAGGTTCCCCACACATGTCAAAGATGTGGCCACTGTGTGC  693
```

FIG. 8A

Title: Purified and Isolated MAT II β
Subunit Nucleic Acids and
Polypeptides...
Inventor: Kotb et al.
Attorney Docket No.: 1306/9/2/2

```
(232) R  Q  L  A  E  K  R  M [L  D  P  S  I  K  G  T  F  H  W  S  G  N  E  Q  M  T] K  Y  E  M  A  C  A  (264)
 694 CGGCAGCTAGCAGAGAAGAGAATGCTGGATCCATCAATTAAGGGAACCTTTCACTGGTCTGGCAATGAACAGATGACTAAGTATGAAATGGCATGTGCA  792

(265) I  A  D  A  F  N  L  P  S  S  H  L  R  P  I  T  D  S  P  V  L  G  A  Q  R  P  R  N  A  Q  L  D  C  (297)
 793 ATTGCAGATGCCTTCAACCTCCCCAGCAGTCACTTAAGACCTATTACTGACAGCCCTGTCCTAGGAGCACAACGTCCGAGAAATGCTCAGCTTGACTGC  891

(298) S  K  L  E  T  L  G  I  G  Q  R  T  P  F  R  I  G  I  K  E  S  L  W  P  F  L  I  D  K  R  W  R  Q  (330)
 892 TCCAAATTGGAGACCTTGGGCATTGGCCAACGAACACCATTTCGAATTGGAATCAAAGAATCACTTTGGCCTTTCCTCATTGACAAGAGATGGAGACAA  990

(331) T  V  F  H Ter                                                                                      (334)
 991 ACGGTCTTTCATTAGTCTATTTGTGTTGGGTTCTTTTTTTTTAAATGAAAAGTATAGTATGTGGCACTTTTTAAAGAACAAAGGAAATAGTTTTGTAT 1089
1090 GAGTACTTTAATTGTGACTCTTAGGATCTTTCAGGTAAATGATGCTCTTGCACTAGTGAAATTGTCTAAAGAAACTAAAGGGCAGTCATGCCCTGTTTG
1189 CAGTAATTTTTCTTTTTATCATTTTGTTTGTCCTGGCTAAACTTGGAGTTTGAGTATAGTAAATTATGATCCTTAAATATTTGAGAGTCAGGATGAAGC
1288 AGACCTGCTGTAGACTTTTCAGATGAAATTGTTCATTCTCGTAACCTCCATATTTTCAGGATTTTTGAAGCTGTTGACCTTTTCATGTTGATTATTTTA
1387 AATTGTGTGAAATAGTATAAAAATCATTGGTGTACATTATTTGCTTTGCCTGAGCTCAGATCAAAATGTTTGAAGAAAGGAACTTTATTTTTGCAAGTT
1486 ACGTACAGTTTTTATGCTTGAGATATTTCAACATGTTATGTATATTGGAACTTCTACAGCTTGATGCCTCCTGCTTTTATAGCAGTTTATGGGGAGCAC
1585 TTGAAAGAGCGTGTGTACATGTATTTTTTTTCTAGGCAAACATTGAATGCAAACGTGTATTTTTTTAATATAAATATATAACTGTCCTTTTCATCCCAT
1684 GTTGCCGCTAAGTGATATTTCATATGTGTGGTTATACTCATAATAATGGGCCTTGTAAGCCTTTTCACCATTCATGAATAATAATAAATATGTACTGCT
1783 GGCATGT(A)18+
```

polyadenylation signal

FIG. 8B

Title: Purified and Isolated MAT II β
Subunit Nucleic Acids and
Polypeptides...
Inventor: Kotb et al.
Attorney Docket No.: 1306/9/2/2

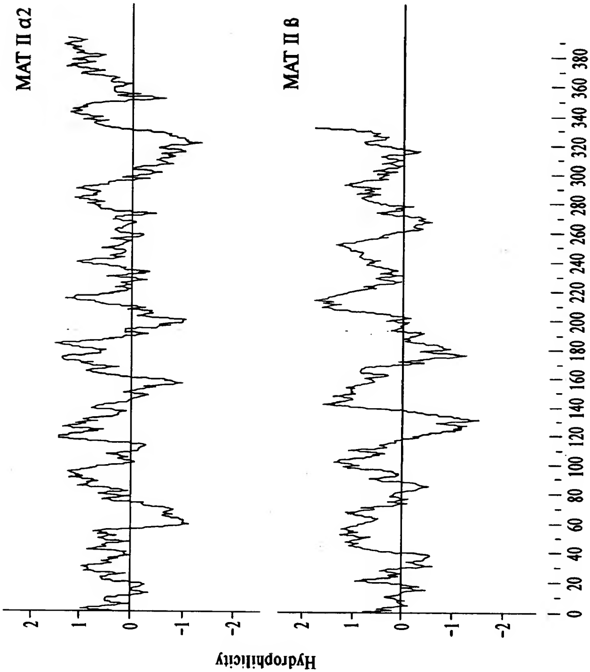


FIG. 9

Title: Purified and Isolated MAT II β
Subunit Nucleic Acids and
Polypeptides...
Inventor: Kotb et al.
Attorney Docket No.: 1306/9/2/2

FIG. 10A

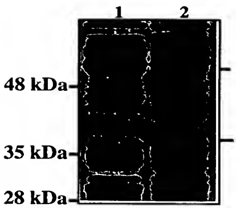


FIG. 10B

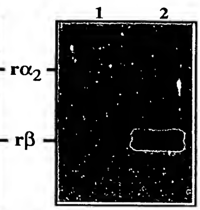


FIG. 10C

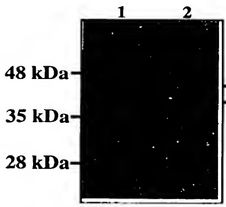


FIG. 10D

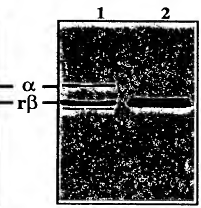
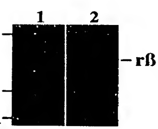


FIG. 11A

FIG. 11B



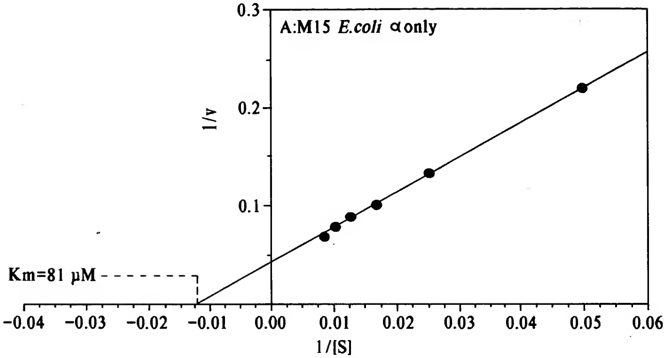


FIG. 12A

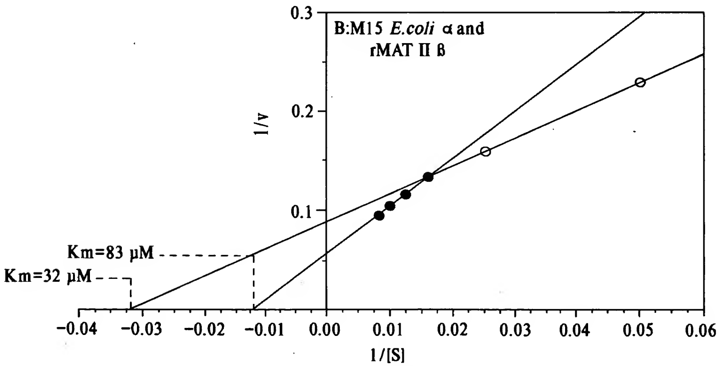


FIG. 12B

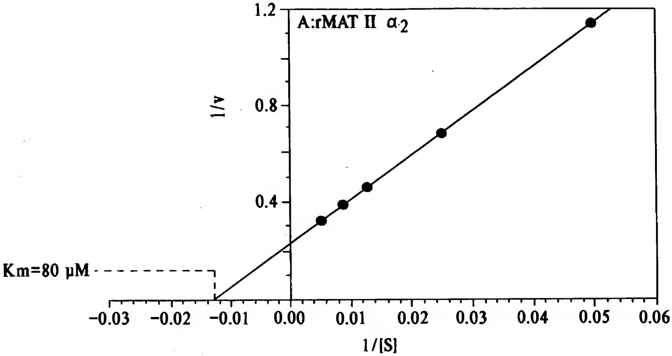


FIG. 12C

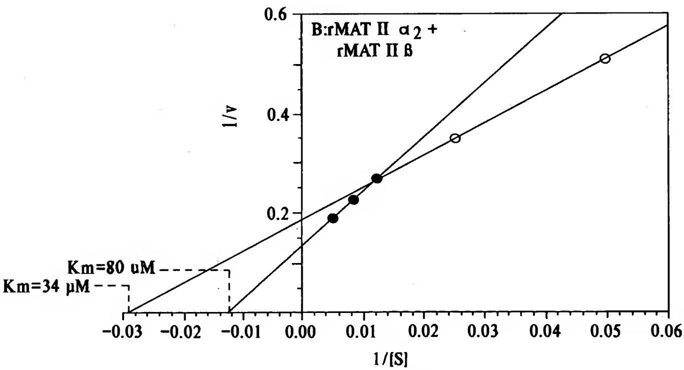


FIG. 12D

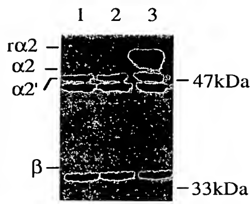


FIG. 13

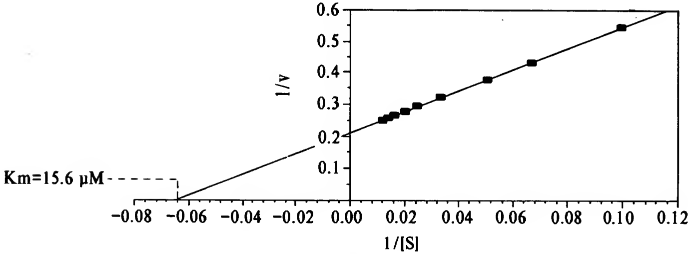


FIG. 14A

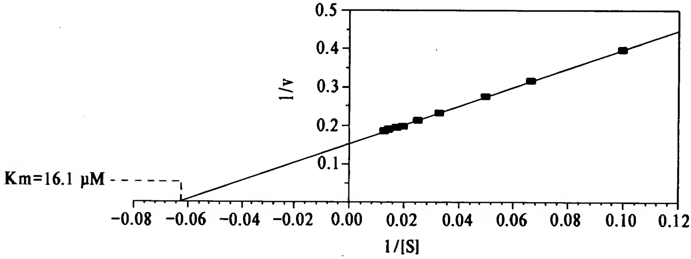
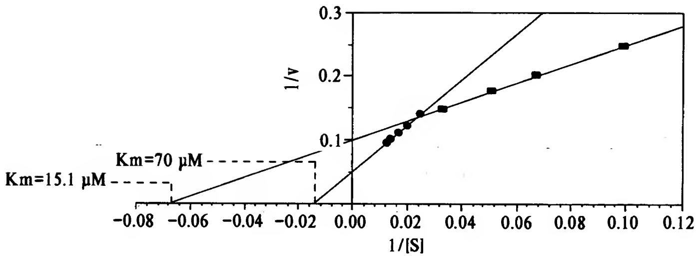


FIG. 14B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0.2
0.1
1/v
Km=70 µM
Km=15.1 µM
−0.08
−0.06
−0.04
−0.02
0.00
0.02
0.04
0.06
0.08
0.10
0.12
1/[S]

FIG. 14C

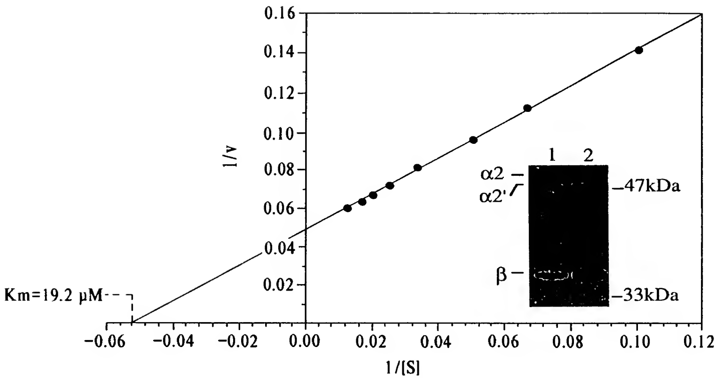
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
1/v
Km=19.2 μM
−0.06
−0.04
−0.02
0.00
0.02
0.04
0.06
0.08
0.10
0.12
1/[S]
1
2
α2
α2'
β
47kDa
33kDa

FIG. 15

Title: Purified and Isolated MAT II β
Subunit Nucleic Acids and
Polypeptides...
Inventor: Kotb et al.
Attorney Docket No.: 1306/9/2/2

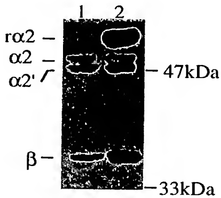

FIG. 16

FIG. 17A

FIG. 17B

FIG. 17C

Title: Purified and Isolated MAT II β
Subunit Nucleic Acids and
Polypeptides...
Inventor: Kotb et al.
Attorney Docket No.: 1306/9/2/2

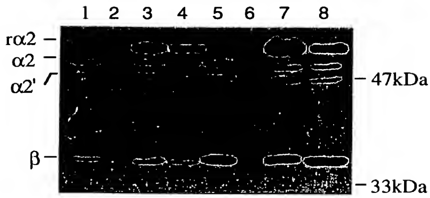

FIG. 18A

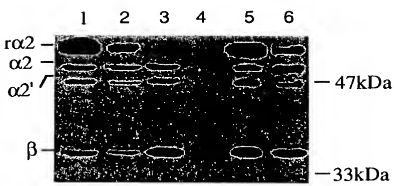

FIG. 18B

Title: Purified and Isolated MAT II β
Subunit Nucleic Acids and
Polypeptides...
Inventor: Kotb et al.
Attorney Docket No.: 1306/9/2/2

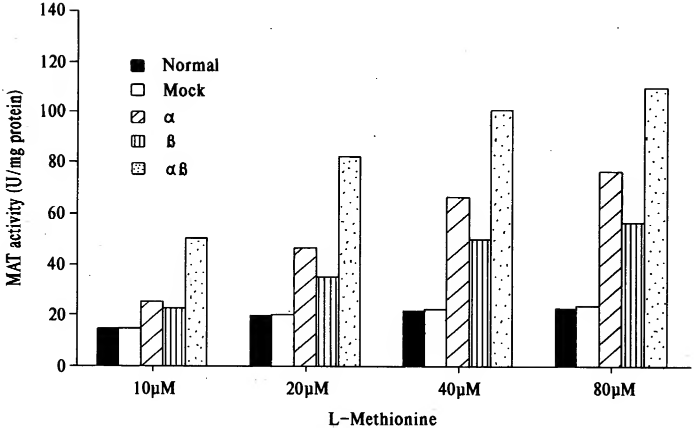

FIG. 19

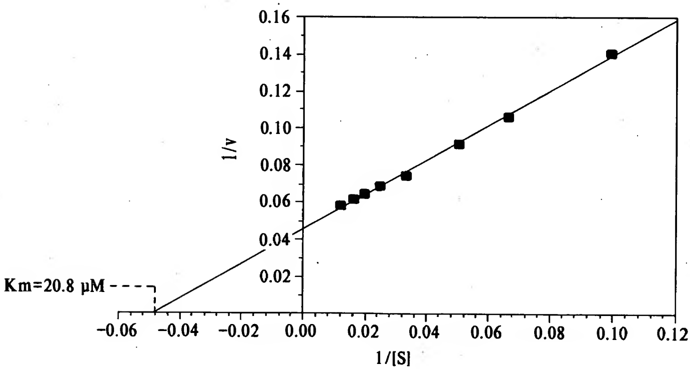

FIG. 20

Title: Purified and Isolated MAT II β
Subunit Nucleic Acids and
Polypeptides...
Inventor: Kotb et al.
Attorney Docket No.: 1306/9/2/2

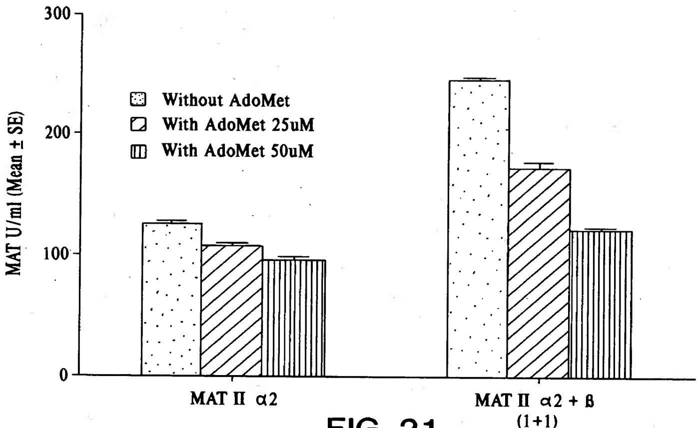

FIG. 21